

The center of the storm seemed to be over a hill near Laurel Lake, as the hailstones were smaller in other parts of the town. From a cottage on this hill the observer seemed to see the southwest wind drive the storm toward Wachusett Mountain, 25 miles southeast, then a countercurrent of east wind blew the cloud back directly toward the hill and the cottage; and the sultry afternoon was followed by the storm, which began with cool winds from the southeast and the northwest at almost the same time.

Hailstones having very interesting corrugations are pictured in the MONTHLY WEATHER REVIEW, for April, 1877. (See fig. 4.) These fell at Morgantown, W. Va., April 28, 1877; they were about two by one and one-half inches, and the average volume was 0.873 cubic inch.

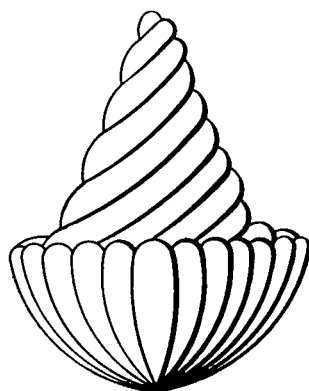


FIG. 4.—Corrugated hailstone.

—C. A.

#### SUGGESTIONS TO OBSERVERS OF HAILSTONES.

In connection with the excellent article by Mr. Landis it may be added that future observers of large hailstones should, if possible, note the following points:

1. Examine many nuclei and ascertain what proportion of them are (a) clear ice, (b) dry snow crystals, (c) a mushy mixture of snow or ice with or without air bubbles.

2. Devise some method of approximately measuring the temperature of the nucleus, as distinguished from the outside layer. The difference of temperature between the inside and outside may be quickly ascertained by thermo-electric methods. The average temperature of a whole hailstone, as well as of its several parts, can be determined by delicate calorimetric methods.

3. Measure the volumes of the successive layers and the nucleus. This is best done by making careful drawings of sections of the hail before it melts, and measuring from these drawings afterwards at leisure.

4. Observe whether the air bubbles in the respective layers are elongated radially, or have any other systematic arrangement.

5. Note the time which elapsed between lightning and thunder and the fall of hail, if any, apparently attending them; the connection is undoubtedly purely accidental, and the observations should bring out this fact.

6. Split the hailstones carefully with a sharp knife and note whether they have special planes of easy cleavage.—C. A.

#### WEATHER BUREAU MEN AS EDUCATORS.

The following lectures and addresses by Weather Bureau men have been reported:

Mr. Joseph L. Cline, June 12, 1906, on "Elements of the Earth's Atmosphere"; also June 27, on "Electricity, Atmospheric Disturbances, Weather Forecasting, and the General Work of the U. S. Weather Bureau", illustrated with stereopticon

views, both before the Summer Normal School, Corpus Christi, Texas.

Mr. P. Connor, April 10, 1905, at the monthly dinner of the Kansas City Implement and Vehicle Club, on "Weather Bureau Work"; also June 9, 1905, before the Kelvin Club of the Central High School, on "The Weather Bureau, Storms, and Forecasting"; also November 16, 1905, before the Technological Society of Kansas City, on "The Equipment of Stations, Weather and Weather Forecasting"; also December 12, 1905, before the Bancroft Club, on "Climate and the Weather"; also February 9, 1906, before the teachers and pupils of the High School, Kansas City, Kans., on "Weather Topics"; also April 11, 1906, before the Athenæum, on "The Success of Weather Forecasting".

Mr. D. A. Seeley, October 26 and 27, 1905, before a class of 40 students in physics, Bradley Polytechnic Institute, Peoria, Ill., on "The Barometer".

Mr. A. H. Thiessen, June 27, 1906, before the class in geography, at the Summer School, State Agricultural and Mechanical College, Raleigh, N. C., on "The Weather Map and Forecasting the Weather".

Classes from colleges, schools, academies, members of teachers' institutes, etc., have visited Weather Bureau offices, to study the instruments and equipment and receive informal instruction, as reported from the following offices:

Buffalo, N. Y., June 5 and 6, 1906, a class of 38 students from the Teachers' Training School No. 10.

Evansville, Ind., June 12, 1906, the graduating class of the Baker Avenue Public School.

Kansas City, Mo., April 15, 1905, pupils and teachers from the High School, Argentine, Kans.; June 6, 1905, a class from the Central High School; October 24, 1905, a class from Loretto Academy; October 24 and 25, pupils from the High School, Kansas City, Kans.; January 20, 1906, principals of local schools; April 24, 1906, some of the Sisters and a large class from Loretto Academy.

Moorhead, Minn., June 30, 1906, pupils of the local Summer School.

Oklahoma, Okla., June 22, 1906, about forty members of the Oklahoma County Teachers' Institute.

Peoria, Ill., August 29 to September 1, 1905, 75 teachers, attending a local teachers' institute; November 6, 1905, a class of 12 students from Knox College, Galesburg, Ill.; May 2, 1906, the "As You Like It" Club of Peoria; June 15, 1906 (the annual "Open Night" at the Bradley Polytechnic Institute), more than a thousand persons.

Raleigh, N. C., June 28, 1906, geography class from the Summer School, Agricultural and Mechanical College.

Sioux City, Iowa, January 16 and 17, also June 7 and 8, 1906, classes from the Sioux City High School, in all about one hundred fifty pupils.

Vicksburg, Miss., June 27, 1906, the junior and senior classes of the Vicksburg High School.

#### RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

H. H. KIMBALL, Librarian.

The following titles have been selected from among the books recently received, as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Most of them can be loaned for a limited time to officials and employees who make application for them.

##### American Climatological Association.

Transactions. xxxi, 218, lx pp. 8°. Detroit. 1905.

##### Chile. Servicio Meteorológico de la Dirección del Territorio Marítimo.

Anuario. 1904. 390 pp. 4°. Valparaiso. 1905.